Density of Introduced Birds (Sturnidae: Mynas) in Urban Areas of Kuching and Samarahan, Sarawak, Malaysia

Mustafa Abdul Rahman, Maisarah Abdullah, Nurfarahin Azizan,
Mohd-Azlan Jayasilan and Andrew Alek Tuen

Abstract**—**Common myna (*Acridotheres tristis*) and Javan myna (*A. javanicus*) belong to the family Sturnidae. These two species range from Iran, Afghanistan, and east through the Indian subcontinent to south China, Indochina and the mainland Southeast Asia. It was introduced to Sarawak in 1980's and since then the population has increased tremendously. A study to determine the density of these two species was conducted in the Kuching and Samarahan Districts, Sarawak, Malaysian Borneo between November 2013 and January 2014. In Kuching City a total of 12 transect lines of 500 m each were established totaling 6 km. In Samarahan District, six 500 m transect lines were established both within Universiti Malaysia Sarawak (UNIMAS) campus and in Serian Town totaling 6 km. The results showed that the density of Javan myna in Kuching City (east) was 43.1 birds/ha, Kuching City (centre) was 21.3 birds/ha and Kuching City (west) was 13.9 birds/ha. The density of common myna at UNIMAS campus was 20.3 birds/ha and Serian Town was 13.2 birds/ha. The density of human population probably plays an important role in determining the density of mynas in an area as it is associated with the availability of food sources, roosting and nesting places originating from human activity.

Keywords**— Borneo, Density, invasive, myna, Sarawak transect**

I. INTRODUCTION

Mynas are taxonomically grouped under family Sturnidae along with the starlings. They are easily distinguished by the conspicuous white patches on the wing during foraging and flight [1]. These social and communal birds are opportunistic omnivores with prime scavenging behaviours that are well adapted to human-associated environments [2]. Of all the Sturnidaes, only Asian glossy starling (*Aplonis panayensis*) and common hill myna (*Gracula religiosa*) are common residents while the other mynas were introduced in small numbers into Borneo [3]. It was believed that the Javan myna (*Acridotheres javanicus*) have been present earlier in Kuching District during the mid-1980s while first sighting of the common myna (*Acridotheres tristis*) was recorded in November 1994 at Kuching army camp [4].

F. A. Author is with the Faculty of Resource Science and Technology, Universiti Malaysia Sarawak (+60-082583019; fax: +60-082583160; e-mail: rmustafa@frst.unimas.my).

S. B. Author was with the Faculty of Resource Science and Technology, Universiti Malaysia Sarawak.

T. C. Author was with the Faculty of Resource Science and Technology, Universiti Malaysia Sarawak

F. D. Author is with the Faculty of Resource Science and Technology, University Malaysia Sarawak

F. E. Author id with the Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak

In most parts of Singapore and south-eastern Australia, introduced-mynas are considered as serious pest in suburban and agricultural lands [1, 5, 6, 7]. These urban birds are commonly associated with various adverse impacts on native wildlife, public environment and economic damages [6]. Such impacts include damage of agricultural crops, declines of breeding success of native birds, excess of noise pollutions, public safety concerns and health risk [1, 8, 9].

The common myna and Javan myna are two of the growing feral bird species in highly populated towns and cities in Sarawak. To date, these invasive species are seemingly self-sustaining in scattered populations around Kuching City [2, 3]. Its current breeding range particularly the common myna had even spanned to adjacent areas in Kota Samarahan. Apart from the successful colonisation of the Eurasian tree sparrow (*Passer montanus*), both mynas populations are steadily increasing although moderately slow. Nevertheless, since the mid-1980s, substantial increase of several populations of common myna and Javan myna were observed in open gardens, agricultural areas, along grassy road turfs and outskirts of Kuching City [2, 3, 4].

Since the first introduction of mynas nearly three decades ago, there has not been any progressive monitoring on their population expansion and movements in east Malaysia (Borneo). Along with this, the breeding biology and nesting ecology of the species are mostly scarce and undescribed in Borneo [2, 3, 4]. Our current knowledge on mynas is rather limited by several extensive studies which were confined exclusively to Singapore [5, 6, 8]. On this small island, both of them along with the house crows (*Corvus splendens*) are the three most successful invasive bird species and regarded as 'major pest' in the country [6].

In contrast to the larger Sarawak province, Bornean mynas might not necessarily colonize and disrupt any given urban environment in rapid succession as in Singapore. For instance, the main Javan myna populations which has earlier historic introduction are much suppressed in Kuching City with very few sightings in Kota Samarahan. However, this is certainly not the case for the common myna where both areas are increasingly occupied over recent years. Also, the rapid development of new residential areas on large clearing of land masses in Kuching District and Kota Samarahan might have prompted its dispersal to these areas. This matter is perhaps commonly overlooked by the gradual presence of small flocks, sometimes singly/pairs/3-4 individuals foraging in scattering open areas.

Several queries such as whether the total ranges of both myna populations overlapped in Kuching City, habitat use of both species, how the population expanded into new breeding areas, and the annual breeding interval or success rate of the mynas are some important questions which needs to be addressed. In general, common myna